

WATER MANAGEMENT IN THE MONGOLIAN MINING INDUSTRY

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General review

- In recent 10 years intensive developing mining industry of Mongolia, increase output gold 17 times, copper and ores molybdenum ores concentrate 30,4%, concentrate of fluorspar 14,6%,
- Mining industry occupy 30% of NGP, 72% of GIP, 67,2% of exports of Mongolia



Mineral resources of Mongolia

- Mongolia is rich in mineral resources; 8000 mineral deposits bearing over 600 mining sites have been discovered including coal, iron, tin, lead, phosphates, fluorspar, uranium, nickel.
- In addition 200 deposits of construction materials\marble, granite, etc\ have been discovered



Legislation on water

- Law on water of Mongolia, 2004
- Mongolian law on water and mineral water use fees
- Water users divided into two groups
- “water user” means citizens, economic entity, organization using water and water environment for profit making in their production and service operation.
- “water utiliser” means customer who used water and water environment for household purposes like drinking, watering pastoral livestock, watering plants not for commercial purposes.



Legislation on water

- Water law of Mongolia regulate water users the requirements to water exploitation, application, authorization for water use, contract on water use, cancellation water contract, license water use, water use and pollution fees etc.
- In article 31.7 of law; it is prohibited to permanently alter natural and original river channels, washing mineral resources in the main river channel and exploration of mineral resources without authorization of Water AUTHORITY of Mongolia.



Legislation on water

- Article 30. an individual, economic entity or an organization which use a water shall be subject tk a fee
- 1 cubic meter ground water-100 tugrics
- 1 cubic meter surfase water-80 tugrics



Water use permission

- 2005 -38 mining industry
- 2006-119 mining industry
- 2007-137 mining industry have got permission water use from the Water Authority of Mongolia
- Now 58 mining companies installed account device in the site.

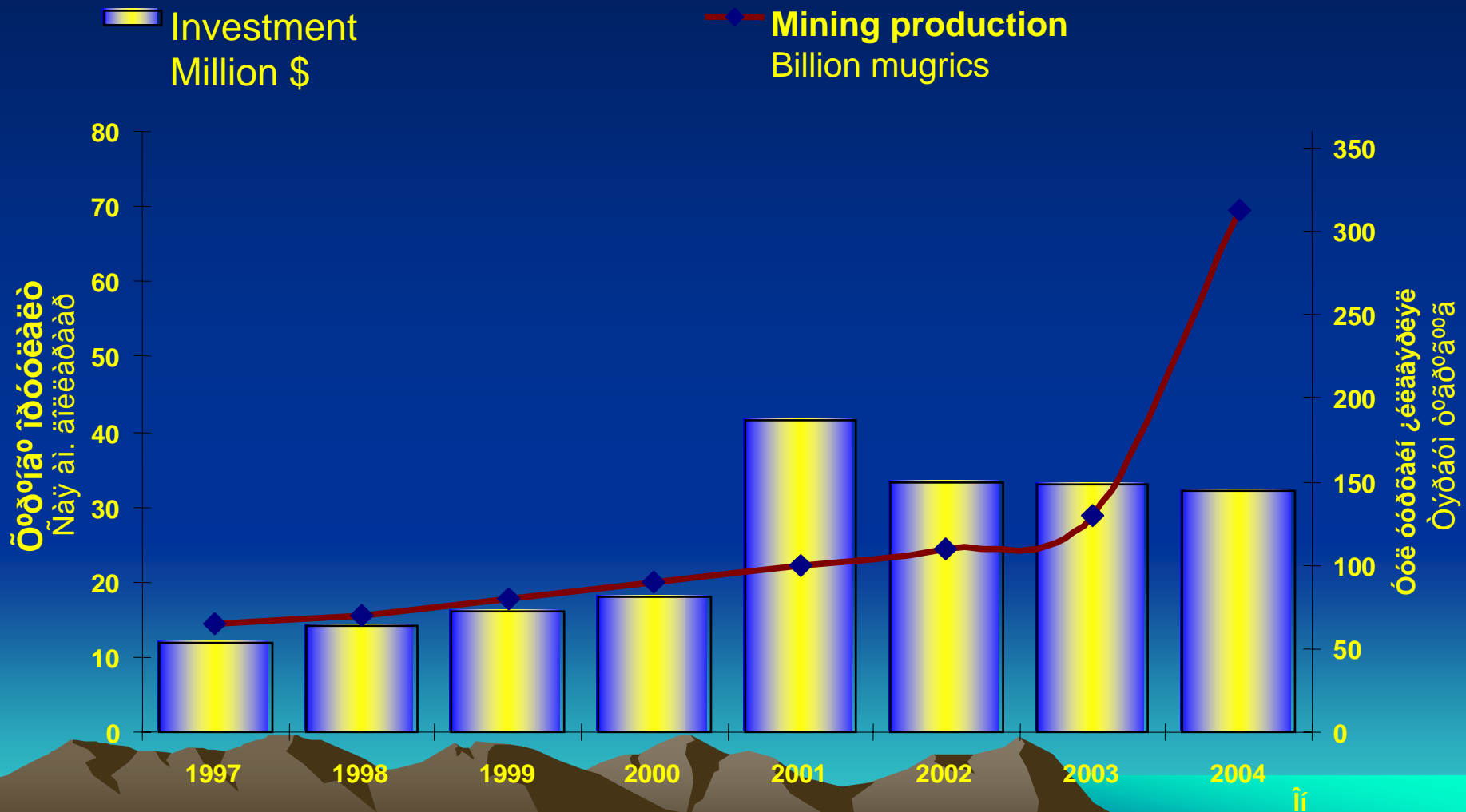


Payment of water use

- 2003-256,8 million tugrics
- 2004-285,9 million tugrics
- 2005-2369,8 million tugrics
- 2006-2739,0 million tugrics
- 2007 -3200,0 million tugrics



Mining investment and production



Reserves of main mineral resources

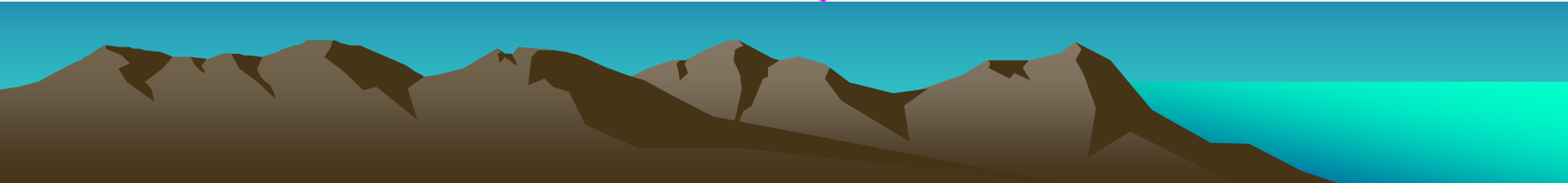
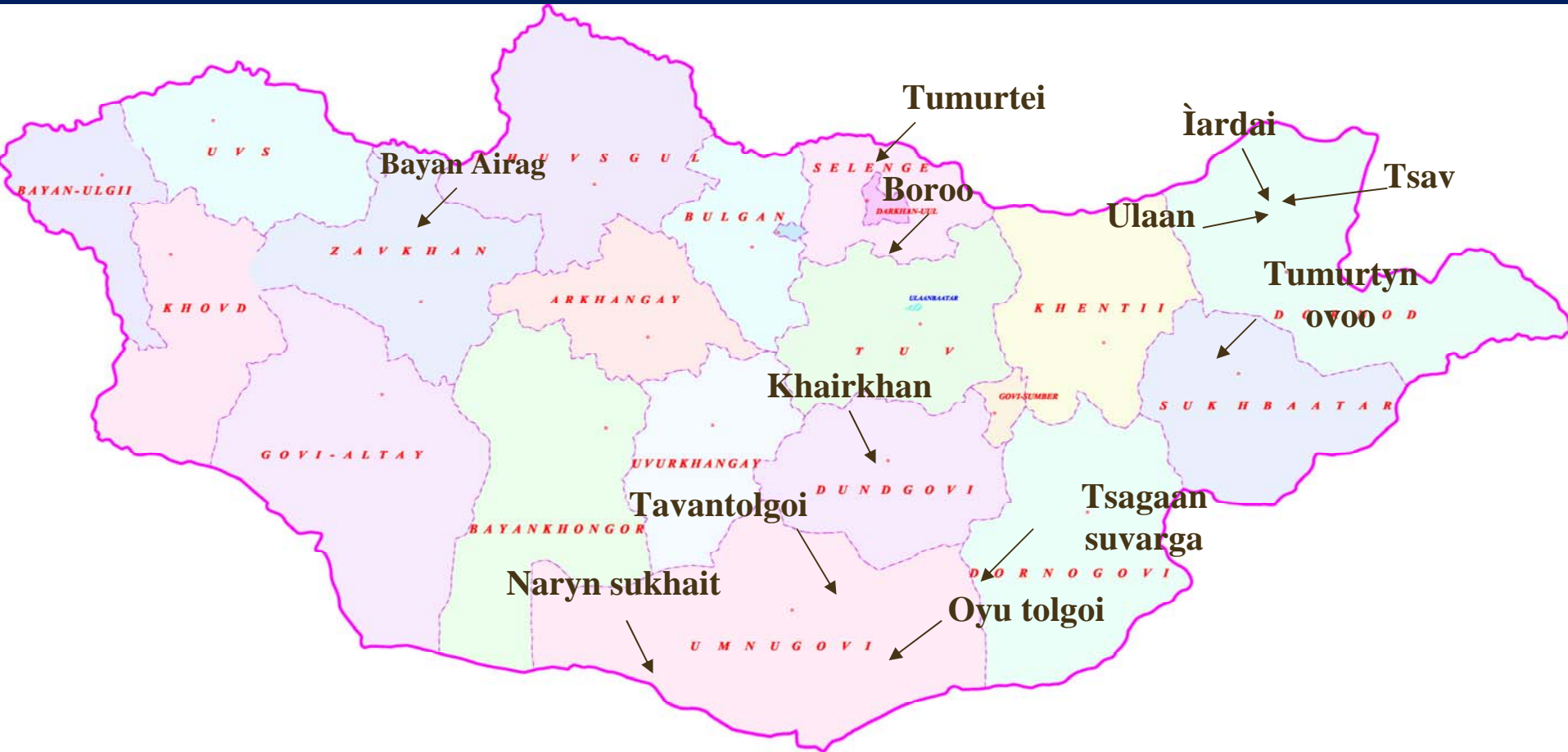
Gold					
native deposit	64.7	òí	zinc	1.56 mln	òí
Îpó òîëãîé	740	òí	tin	11870	òí
placer	62.3	òí	uranium	64000	òí
silver	8760	òí	coal	8.54 bln	òí
copper			fluorspar	14.24 mln	òí
Îpó òîëãîé	22 mln	òí	phosphates	2.4 bln	òí
other	6.92 mln	òí	zeolit	4.8 mln	òí
òolybdenum	213210	òí	grafite	75300	òí
iron	427.1 mln	òí	Fase building materials		
tungsten	63670	òí			
lead	1.92 mln	òí			109.4 mln M ³

Water use in Mongolia \million m.cubic\

- Drinking water supply-71
- Agricultural water supply livestock-80
- Crop irrigation-52
- Exploitation industry-36
- Extractive mining industry-94
- Energy production,power plants-27
- Hydropower plant-80
- Total-443



Implementing and near future to be implemented projects



Water use technology

- Water supply for mining industries is the responsibility of the mines.
- In most of the areas with a large concentration of mining industries, investigations for water supply sources and determine the water consumption regimes
- In the other hand many smaller mining companies did not evaluate their resources and did not define their availability.
- After studying the water sources and availability for 118 mining companies it was concluded that 62 of them are using groundwater and 56 of them using surface water.
- Some smaller placer gold mining companies are preserving rainfall, and use it for filtering pure gold.



Water use technology

- The water supply system differs for different mining industries.
- The mining industry at Erdenet has sufficient water resources. It gets its water from the river Selenga. The water is transferred for a distance 64 km, to the mining location.
- Boroo mining industry gets its water from the river Boroo, which is not far from mining location.
- Many placer gold mining industries especially the companies in Bayankhongor, Govi-Altai provinces have inadequate water supply.



Impact of mining

- Most of the mining activity in Mongolia is of open pit tip
- According to law all open pits must be reclaimed but that is not enforced
- Open pits create unproductive scars on the landscapes and their associated spoil dumps are subject to wind and water erosion, thus negatively affecting air and water quality
- Water resources polluted by influence of illegal gold mining activities, are affected greatly.
- Some peoples who is used hand extractive method for gold catch activities are moving many hundred tons soils, earth to river water.



Conclusion of the water use

- Mining activities especially gold mining have significant environmental impact. Change of landscape without restoration after closing the mine. Redirection or drying up of rivers due to water use, pollution
- In some cases lack of water resources near the mineral deposits is a constraint for potential mining activities and water has to be transferred from other basins



Sewerage system and wastewater treatment plants in Ulaanbaatar

- USUG operates wastewater treatment plant and 4 small wastewater treatment plants.
- The central wastewater treatment has a potential capacity 230000 cubic meter of domestic and industrial wastewater per day, since not all parts are well functioning.
- The central wastewater treatment plant includes primary and secondary \biological, activated sludge\ treatment with disinfection\chlorination\ at the outlet.



Water supply and wastewater treatment in provincial towns.

- To improve water supply and sanitation services in provincial towns one of the object of Mongolian Governments policy.
- In 13 provincial towns implementing projects of improvement of the water supply services and sanitation funded by Asian Development Bank

